IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: § Serial No. Not Yet Known
Adrian P. Wise et al.   §
                             § Art Unit: 2783 (anticipated)
Filed: HEREWITH   §
                             § Examiner: Follansbee, J. (anticipated)
For: MULTISTANDARD VIDEO   §
DECODER AND DECOMPRESSION   § Attorney Docket No.:
SYSTEM FOR PROCESSING   §   94100413(EP)USC1X1C1D2 PDDD
ENCODED BIT STREAMS   §
INCLUDING TOKENS AND   §
METHODS RELATING THERETO   §

PRELIMINARY AMENDMENT

Box PATENT APPLICATION
Assistant Commissioner for Patents
Washington DC 20231

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Sir:

Prior to issuance of Serial Number 09/307,239 filed on October 7, 1997, and entitled MULTISTANDARD VIDEO DECODER AND DECOMPRESSION SYSTEM FOR PROCESSING ENCODED BIT STREAMS INCLUDING START CODES AND METHODS RELATING THERETO, applicant wishes to file a new divisional application thereon.

In the Specification:

On page 1, line 1, please delete "DATA PIPELINE SYSTEM AND DATA ENCODING METHOD" and in place thereof, please insert new title:

--MULTISTANDARD VIDEO DECODER AND DECOMPRESSION SYSTEM FOR PROCESSING ENCODED BIT STREAMS INCLUDING TOKENS AND METHODS RELATING THERETO--.

On page 1, lines 2-8, please delete "This is a continuation-in-part application of U.S. Serial No. (not yet known) filed February 2, 1995, which is a continuation application of Serial No. 08/082,291 filed June 24, 1993. This application claims priority from EPO Application No. 92306038.8 filed June 30, 1992, British Application No. 9405914.4 filed March 24, 1994 and British Application No. (not yet known) filed February 28, 1995." and in place thereof please insert the following heading and paragraph:

--CROSS REFERENCE TO RELATED APPLICATIONS

This application is a divisional of U.S. Serial No. 09/307,239 filed October 7, 1997, which is a continuation of U.S. Serial No. 08/400,397 filed March 7, 1995, which is a Continuation-In-Part of U.S. Serial No. 08/382,958 filed February 2, 1995, now abandoned, which is a continuation of U.S. Serial No. 08/082,291 filed June 24, 1993, now abandoned.--

In the Claims:

Please add the following claims:

1   1. An apparatus for processing tokens having variable length, comprising:

2   a padder to receive the tokens and to pad a portion of the tokens received by

3 adding a tail which produces new tokens having integer numbers of data words of a

4 predetermined length; and

5   a storage buffer configured to store data words of the predetermined length

6 and coupled to receive the new data tokens from the padder.

1   2. The apparatus of claim 1, wherein two types of the new tokens have two

2 different numbers of words.

1   3. The apparatus of claim 1, wherein different data tokens may have different

2 numbers of data words.

1   4. The apparatus of claim 1, further comprising:

2   a multi-stage pipelined decoder; and

3   a two-wire interface coupling the pipeline to an output of the buffer.

1   5. The apparatus of claim 4, wherein a portion of the stages of the decoder

2 are reconfigurable to decode video data by a portion of the tokens.

3

1 6. The apparatus of claim 5, wherein configurations of the stages are

2 responsive to standards by which data in the portion of the tokens is formatted.

1 7. The apparatus of claim 6 wherein the standards include two of MPEG,

2 JPEG, and H.261.

1 8. The apparatus of claim 1, further comprising:

2 a start code detector, the buffer being located in the start code detector.

1 9. The apparatus of claim 1, further comprising:

2 a semiconductor chip, the padder and the buffer being located on the chip.

1 10. The apparatus of claim 1, wherein the padder is a hardware device.

1 11. The apparatus of claim 4, wherein the pipeline includes:

2 a Huffman decoder coupled to receive the tokens from the padder;

3 a token formatter coupled to receive data from the Huffman decoder; and

4 an inverse modeler coupled to receive data from the token formatter.

1 12. A method of processing video data, comprising:

2 receiving tokens in a first stage of a pipeline, a portion of the tokens having a

3 plurality of words;

4 padding one of the tokens to have a length equal to an integral number of

5 words;

6 sending the tokens to the remainder of the pipeline; and

7   reconfiguring a portion of the stages of the remainder of the pipeline for data

8   processing in response to receiving the tokens belonging to predetermined token

9   types.

1   13. The method of claim 12, wherein reconfiguring is responsive to standards

2   by which video data in the received tokens are formatted.

1   14. The method of claim 13, wherein the standards include two of MPEG,

2   JPEG, and H.261.

1   15. The method of claim 12, further comprising:

2   detecting a start code in a data stream; and

3   wherein padding is performed in response to detecting the start code.

1   16. The method of claim 12, wherein each word of a token includes one or

2   more extension bits.

1   17. The method of claim 16, wherein reconfiguring one of the stages includes:

2   receiving a first word of one of the tokens in the one of the stages; and

3   reconfiguring the one of the stages to process the word in response to

4   determining that the first word belongs to a type of token processed by the one of the

5   stages.

1   18. The method of claim 17, further comprising:

2   receiving another word in the one of the stages; and

3   reading one or more extension bits of the other word and processing the other
4   word according to the procedure for processing a previous word in response to
5   determining that the other word belongs to a same token as the previous word.

1   19. A system for decoding video frames, comprising:
2   a token padder to pad data tokens of different lengths by adding a tail which
3   produces new tokens having integer numbers of data words of a predetermined
4   length;
5   a Huffman decoder to receive the padded tokens;
6   a token formatter coupled to receive data tokens from the Huffman decoder;
7   a buffer to store tokens from the token formatter; and
8   an inverse modeler coupled to receive the tokens from the buffer.

        20. The system of claim 19, wherein the Huffman decoder is configured to
    decode data of at least two of the standards JPEG, MPEG, and H.261.

1   21. The system of claim 19 further comprising:
2   an inverse quantizer coupled to receive data from the inverse modeler; and
3   an inverse discrete cosine transformer coupled to the inverse quantizer.
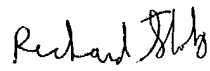

1   22. The system of claim 19, wherein the decoder is a hardware device.

REMARKS

Should the Examiner believe that contact with Applicant's attorney would be beneficial to the disposition of this application, he is invited to contact Applicant's attorney at the telephone number listed below. The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment to Deposit Account No. 94-1175.

Respectfully submitted,

Date: 1/25/01

Richard Stokey
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